$PM_{2.5}$ Implementation--USMC Operational Impacts Assessment

7 April 2004

Mr. Elmer Ransom
Headquarters, USMC

Mr. Jeff Davis
URS Corporation

Overview

- What about $PM_{2.5}$?
- Evolution of $PM_{2.5}$ Standards
- Preliminary Area Designations
- USMC Operational Impacts Assessment
- Status and Preliminary Conclusions
- Questions and Answers

What about $PM_{2.5}$?

- Particles in air, $diameter_{aero} < 2.5\ \mu m$
- Health, visibility, deposition concerns
  - Particles lodge deep in lungs
  - Impair visibility
  - Affects diversity of ecosystem
- Emitted directly or formed in air
  - Combustion, wild fires, unpaved roads, etc.
  - Chemical reactions to form aerosols

Evolution of $PM_{2.5}$ Standards

- Dec 1996 - EPA proposed new NAAQS
  - 15 μg/m³ (annual)
  - 50 μg/m³ (24-hr)
- Mar 1997 - DoD expressed concerns
- June 1997 - EPA responded to DoD
- July 1997 - EPA announced new NAAQS
  - 15 μg/m³ (annual)
  - 65 μg/m³ (24-hr)

DoD Concerns

- Potential training and readiness impacts
  - Restrictions on obscurants
  - Control of fugitive dust from field exercises
  - Operational restrictions on tactical equipment
- Potential increased difficulty in meeting general conformity requirements
- Potential increased costs for Title V, NSR, and control tech. requirements

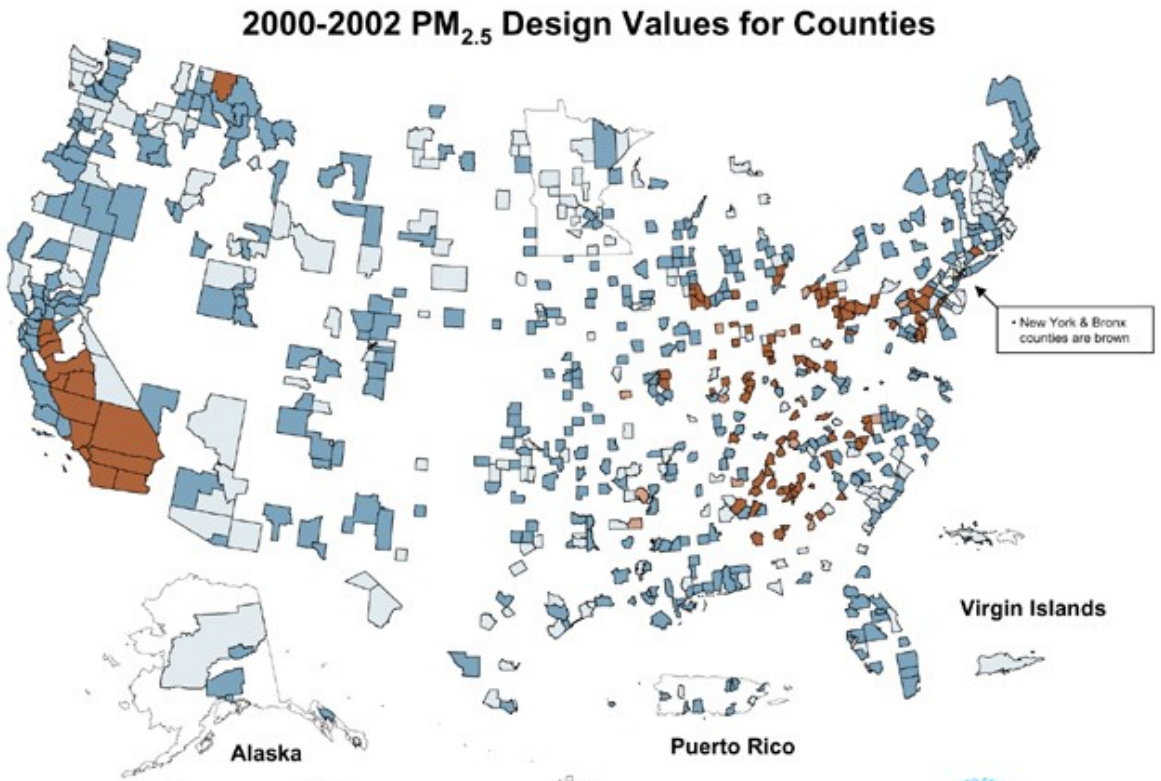
EPA Timeline for $PM_{2.5}$ NAAQS Implementation Program

- Mid-2004 - EPA issues proposed $PM_{2.5}$ implementation rule
- Mid-2005 - EPA issues final $PM_{2.5}$ implementation rule
- Late-2005 - EPA issues final $PM_{2.5}$ designations
- Late-2008 - SIPs due for $PM_{2.5}$ nonattainment areas
- Late-2010 - 2015 - Date for attaining $PM_{2.5}$ standards

Preliminary Area Designations

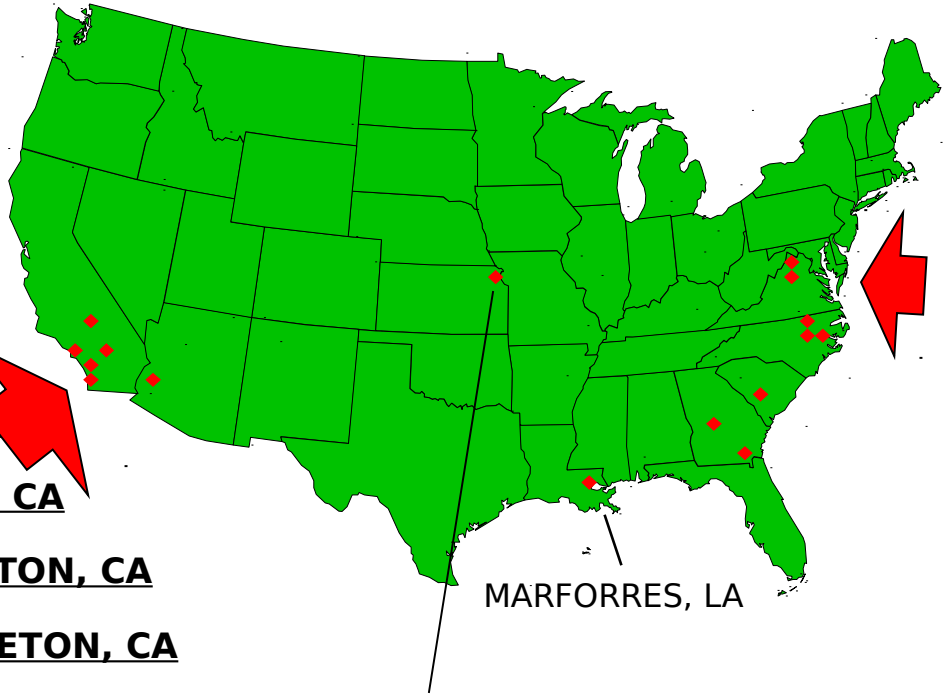
- $PM_{2.5}$ monitoring conducted since 1999
- Based on 2000-2002 data…
  - 120 counties with population of ~65 million may violate proposed 24-hr $PM_{2.5}$ NAAQS

Preliminary Area Designations



	Violate	Attain
Complete Data	64,849,620 (120)	110,864,052 (404)
Incomplete Data	2,405,338 (14)	30,186,346 (190)

USMC Installations (CONUS)



MCLB BARSTOW, CA

MCAGCC 29 PALMS, CA

MCB CAMP PENDLETON, CA

MCAS CAMP PENDLETON, CA

MCAS MIRAMAR, CA

MCRD SAN DIEGO, CA

MCAS YUMA, AZ

MARBKS 8TH & I, WASH DC

HQMC, WASH DC

MCB QUANTICO, VA

MCAS CHERRY POINT, NC

MCB CAMP LEJEUNE, NC

MCAS NEW RIVER, NC

MCRD PARRIS ISLAND, SC

MCAS BEAUFORT, SC

MCLB ALBANY, GA

BIC JACKSONVILLE, FL

USMC Operational Impacts Assessment

- Objectives:
  - Evaluate the new standard's impacts on USMC training and readiness operations
  - Recommend compliance strategies
- Revisit DoD concerns
- Conduct impacts assessment for representative activities at applicable USMC installations
- Forms the basis for USMC comments and concerns during rulemaking

Data Collection

- Collect emissions data on stationary, mobile, and area sources
- Use existing data where possible
  - Review permits, inventory, regulatory submittals
  - SIP growth planning documents
  - Interviews with installation POCs
  - Coordination with DoD $PM_{2.5}$ Working Group (CAA Services Steering Committee)

$PM_{2.5}$ Emissions Identification

- Where holes exist, calculate $PM_{2.5}$ emissions based on best available data
  - Use source-specific EFs from manufacturers, EPA, or CARB, where available
- Prioritize sources based on emissions magnitude and relative contribution
  - Stationary, mobile, and area
  - Source-type comparison with local regulatory agency categories

Source Testing

- Where no EFs available or where unreliable, candidate for source testing
  - Potential “double-edged sword”
  - Cost-benefit analysis
- Potential candidates under consideration
  - Rotor downwash, unpaved road dust from field training activities
- No source testing conducted yet

$PM_{2.5}$ Compliance Requirements Analysis

- Review local regulatory agency plans for implementation
  - Implementation schedules and attainment strategies
- Reviewed existing relevant $PM_{2.5}$ studies (i.e., MCAGCC 29 Palms $PM_{2.5}$ Monitoring Study)
- Prepared to review and comment on draft implementation rule
  - Impacts on training and readiness ops
  - Compliance strategies

Status and Preliminary Conclusions

- Preliminary emissions analysis complete
  - Largest contributor
    - Area sources, unpaved road dust (field training activities)
  - Much smaller but noteworthy
    - Mobile sources from aircraft operations
  - Insignificant
    - Stationary sources
- Recent discussions with San Diego APCD
  - Little progress regarding implementation plans
  - Strong USMC/Navy installation presence

Status and Preliminary Conclusions

- Recent discussions with Mojave Desert AQMD
  - Potential attainment for Federal $PM_{2.5}$ NAAQS
  - Potential nonattainment for State $PM_{2.5}$ Standard
  - Subject to change
  - USMC installations affected:
    - MCAGCC 29 Palms, MCLB Barstow
    - Implications
      - Limited Federal regulatory concerns but still State concerns
  - Little progress regarding implementation plans
- Staged to review and comment on EPA draft implementation rule

Questions and Answers

Mr. Elmer Ransom
Headquarters, USMC
(703) 695-8232 (x3337)
ransomew@hqmc.usmc.mil

Mr. Jeff Davis
URS Corporation
(714) 433-7720
jeffrey_davis@urscorp.com